

# Roberto Orosei

## List of Publications by Year in descending order

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123  
papers

5,441  
citations

87886

38  
h-index

85537

71  
g-index

136  
all docs

136  
docs citations

136  
times ranked

3438  
citing authors

#	ARTICLE	IF	CITATIONS
1	Radar evidence of subglacial liquid water on Mars. <i>Science</i> , 2018, 361, 490-493.	12.6	346
2	Subsurface Radar Sounding of the South Polar Layered Deposits of Mars. <i>Science</i> , 2007, 316, 92-95.	12.6	330
3	Radar Soundings of the Subsurface of Mars. <i>Science</i> , 2005, 310, 1925-1928.	12.6	327
4	The organic-rich surface of comet 67P/Churyumov-Gerasimenko as seen by VIRTIS/Rosetta. <i>Science</i> , 2015, 347, aaa0628.	12.6	293
5	SHARAD sounding radar on the Mars Reconnaissance Orbiter. <i>Journal of Geophysical Research</i> , 2007, 112, .	3.3	273
6	Mars North Polar Deposits: Stratigraphy, Age, and Geodynamical Response. <i>Science</i> , 2008, 320, 1182-1185.	12.6	271
7	The diurnal cycle of water ice on comet 67P/Churyumov-Gerasimenko. <i>Nature</i> , 2015, 525, 500-503.	27.8	199
8	Cryovolcanic features on Titan's surface as revealed by the Cassini Titan Radar Mapper. <i>Icarus</i> , 2007, 186, 395-412.	2.5	191
9	SHARAD: The MRO 2005 shallow radar. <i>Planetary and Space Science</i> , 2004, 52, 157-166.	1.7	153
10	Radar Sounding of the Medusae Fossae Formation Mars: Equatorial Ice or Dry, Low-Density Deposits?. <i>Science</i> , 2007, 318, 1125-1128.	12.6	143
11	The Mars express MARSIS sounder instrument. <i>Planetary and Space Science</i> , 2009, 57, 1975-1986.	1.7	134
12	Multiple subglacial water bodies below the south pole of Mars unveiled by new MARSIS data. <i>Nature Astronomy</i> , 2021, 5, 63-70.	10.1	127
13	Performance and surface scattering models for the Mars Advanced Radar for Subsurface and Ionosphere Sounding (MARSIS). <i>Planetary and Space Science</i> , 2004, 52, 149-156.	1.7	125
14	Exposed water ice on the nucleus of comet 67P/Churyumov-Gerasimenko. <i>Nature</i> , 2016, 529, 368-372.	27.8	104
15	Shallow radar (SHARAD) sounding observations of the Medusae Fossae Formation, Mars. <i>Icarus</i> , 2009, 199, 295-302.	2.5	102
16	JIRAM, the Jovian Infrared Auroral Mapper. <i>Space Science Reviews</i> , 2017, 213, 393-446.	8.1	91
17	Accumulation and Erosion of Mars' South Polar Layered Deposits. <i>Science</i> , 2007, 317, 1715-1718.	12.6	84
18	Virtis : an imaging spectrometer for the rosetta mission. <i>Planetary and Space Science</i> , 1998, 46, 1291-1304.	1.7	72

#	ARTICLE	IF	CITATIONS
19	Mars Advanced Radar for Subsurface and Ionospheric Sounding (MARSIS) after nine years of operation: A summary. <i>Planetary and Space Science</i> , 2015, 112, 98-114.	1.7	66
20	Titan's diverse landscapes as evidenced by Cassini RADAR's third and fourth looks at Titan. <i>Icarus</i> , 2008, 195, 415-433.	2.5	65
21	SHARAD radar sounding of the Vastitas Borealis Formation in Amazonis Planitia. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	63
22	Self-affine behavior of Martian topography at kilometer scale from Mars Orbiter Laser Altimeter data. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	61
23	Seasonal exposure of carbon dioxide ice on the nucleus of comet 67P/Churyumov-Gerasimenko. <i>Science</i> , 2016, 354, 1563-1566.	12.6	61
24	The Main Belt Comets and ice in the Solar System. <i>Astronomy and Astrophysics Review</i> , 2017, 25, 1.	25.5	60
25	RIME: Radar for Icy Moon Exploration. , 2013, , .		57
26	Mars Express investigations of Phobos and Deimos. <i>Planetary and Space Science</i> , 2014, 102, 18-34.	1.7	54
27	Direct observations of asteroid interior and regolith structure: Science measurement requirements. <i>Advances in Space Research</i> , 2018, 62, 2141-2162.	2.6	54
28	Quantitative analysis of Mars surface radar reflectivity at 20MHz. <i>Icarus</i> , 2012, 220, 84-99.	2.5	52
29	Dielectric properties of Jovian satellite ice analogs for subsurface radar exploration: A review. <i>Reviews of Geophysics</i> , 2015, 53, 593-641.	23.0	52
30	Subsurface Radar Sounding of the Jovian Moon Ganymede. <i>Proceedings of the IEEE</i> , 2011, 99, 837-857.	21.3	49
31	Mars ionosphere total electron content analysis from MARSIS subsurface data. <i>Icarus</i> , 2013, 223, 423-437.	2.5	49
32	Observations of Vertical Reflections from the Topside Martian Ionosphere. <i>Space Science Reviews</i> , 2007, 126, 373-388.	8.1	47
33	Annual variations in the Martian bow shock location as observed by the Mars Express mission. <i>Journal of Geophysical Research: Space Physics</i> , 2016, 121, 11,474.	2.4	44
34	Transition Elements between Comets and Asteroids. <i>Icarus</i> , 1997, 129, 317-336.	2.5	43
35	Small edifice features in Chryse Planitia, Mars: Assessment of a mud volcano hypothesis. <i>Icarus</i> , 2016, 268, 56-75.	2.5	43
36	A P/Wirtanen evolution model. <i>Planetary and Space Science</i> , 1996, 44, 987-1000.	1.7	41

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37	Chiron Activity and Thermal Evolution. <i>Astronomical Journal</i> , 2000, 119, 3112-3118.	4.7	41
38	Climate-driven deposition of water ice and the formation of mounds in craters in Mars's north polar region. <i>Icarus</i> , 2012, 220, 174-193.	2.5	41
39	Solar cycle variations in the ionosphere of Mars as seen by multiple Mars Express data sets. <i>Journal of Geophysical Research: Space Physics</i> , 2016, 121, 2547-2568.	2.4	40
40	Transition Elements between Comets and Asteroids. <i>Icarus</i> , 1997, 129, 337-347.	2.5	38
41	Models of P/Wirtanen nucleus: active regions versus non-active regions. <i>Planetary and Space Science</i> , 1999, 47, 855-872.	1.7	36
42	New 3D thermal evolution model for icy bodies application to trans-Neptunian objects. <i>Astronomy and Astrophysics</i> , 2011, 529, A71.	5.1	34
43	Titan as Revealed by the Cassini Radar. <i>Space Science Reviews</i> , 2019, 215, 1.	8.1	34
44	Thermal evolution and differentiation of a short-period comet. <i>Planetary and Space Science</i> , 1993, 41, 409-427.	1.7	33
45	Vertical sheets of dense plasma in the topside Martian ionosphere. <i>Journal of Geophysical Research</i> , 2007, 112, .	3.3	33
46	Ground penetrating radar investigations to study active faults in the Norcia Basin (central Italy). <i>Journal of Applied Geophysics</i> , 2010, 72, 39-45.	2.1	33
47	Total electron content in the Martian atmosphere: A critical assessment of the Mars Express MARSIS data sets. <i>Journal of Geophysical Research: Space Physics</i> , 2015, 120, 2166-2182.	2.4	32
48	Jupiter ICY moon explorer (JUICE): Advances in the design of the radar for Icy Moons (RIME). , 2015, , .		29
49	An incoherent simulator for the SHARAD experiment. , 2008, , .		27
50	The Castalia mission to Main Belt Comet 133P/Elst-Pizarro. <i>Advances in Space Research</i> , 2018, 62, 1947-1976.	2.6	27
51	Origin of the Extended Mars Radar Blackout of September 2017. <i>Journal of Geophysical Research: Space Physics</i> , 2019, 124, 4556-4568.	2.4	27
52	The exploration of Titan with an orbiter and a lake probe. <i>Planetary and Space Science</i> , 2014, 104, 78-92.	1.7	26
53	Explorer of Enceladus and Titan (E2T): Investigating ocean worlds' evolution and habitability in the solar system. <i>Planetary and Space Science</i> , 2018, 155, 73-90.	1.7	26
54	Thermal Evolution of the Centaur Object 5145 Pholus. <i>Astronomical Journal</i> , 2000, 120, 1571-1578.	4.7	24

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55	Dielectric constant estimation of the uppermost Basal Unit layer in the martian Boreales Scopuli region. <i>Icarus</i> , 2012, 219, 458-467.	2.5	23
56	Results from the comet nucleus model team at the international space science institute, Bern, Switzerland. <i>Advances in Space Research</i> , 1999, 23, 1283-1298.	2.6	20
57	MUSES: multi-sensor soil electromagnetic sounding. <i>Planetary and Space Science</i> , 2004, 52, 67-78.	1.7	20
58	Permittivity estimation over Mars by using SHARAD data: the Cerberus Palus area. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	20
59	Numerically improved thermochemical evolution models of comet nuclei. <i>Planetary and Space Science</i> , 1999, 47, 839-853.	1.7	19
60	Sounding the subsurface of Athabasca Valles using MARSIS radar data: Exploring the volcanic and fluvial hypotheses for the origin of the rafted plate terrain. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	19
61	Permittivity estimation of layers beneath the northern polar layered deposits, Mars. <i>Geophysical Research Letters</i> , 2010, 37, .	4.0	18
62	Global permittivity mapping of the Martian surface from SHARAD. <i>Earth and Planetary Science Letters</i> , 2017, 462, 55-65.	4.4	18
63	JIRAM, the Image Spectrometer in the Near Infrared on Board the Juno Mission to Jupiter. <i>Astrobiology</i> , 2008, 8, 613-622.	3.0	17
64	Radar Signal Propagation and Detection Through Ice. <i>Space Science Reviews</i> , 2010, 153, 249-271.	8.1	17
65	Radar Signal Penetration and Horizons Detection on Europa Through Numerical Simulations. <i>IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing</i> , 2017, 10, 118-129.	4.9	17
66	The Global Search for Liquid Water on Mars from Orbit: Current and Future Perspectives. <i>Life</i> , 2020, 10, 120.	2.4	16
67	The Mars Advanced Radar for Subsurface and Ionosphere Sounding (MARSIS): concept and performance. , 0, , .		15
68	Ionospheric corrections of MARSIS subsurface sounding signals with filters including collision frequency. <i>Planetary and Space Science</i> , 2009, 57, 393-403.	1.7	15
69	Assessing the role of clay and salts on the origin of MARSIS basal bright reflections. <i>Earth and Planetary Science Letters</i> , 2022, 579, 117370.	4.4	15
70	A working environment for digital planetary data processing and mapping using ISIS and GRASS GIS. <i>Planetary and Space Science</i> , 2011, 59, 1265-1272.	1.7	14
71	Improved estimation of Mars ionosphere total electron content. <i>Icarus</i> , 2018, 299, 396-410.	2.5	14
72	Removal of atmospheric features in near infrared spectra by means of principal component analysis and target transformation on Mars: I. Method. <i>Icarus</i> , 2015, 253, 51-65.	2.5	13

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73	The Impact of Energetic Particles on the Martian Ionosphere During a Full Solar Cycle of Radar Observations: Radar Blackouts. <i>Journal of Geophysical Research: Space Physics</i> , 2022, 127, .	2.4	13
74	Radar sounding of Lucus Planum, Mars, by MARSIS. <i>Journal of Geophysical Research E: Planets</i> , 2017, 122, 1405-1418.	3.6	12
75	Collision-induced thermal evolution of a comet nucleus in the Edgeworth-Kuiper Belt. <i>Advances in Space Research</i> , 2001, 28, 1563-1569.	2.6	11
76	Mars Advanced Radar for Subsurface and Ionosphere Sounding (MARSIS): subsurface performances evaluation. , 0, , .		11
77	MARSIS data inversion approach: Preliminary results. , 2008, , .		11
78	Topside of the martian ionosphere near the terminator: Variations with season and solar zenith angle and implications for the origin of the transient layers. <i>Icarus</i> , 2015, 251, 12-25.	2.5	10
79	CLUSIM: A Synthetic Aperture Radar Clutter Simulator for Planetary Exploration. <i>Radio Science</i> , 2017, 52, 1200-1213.	1.6	10
80	Comparison between MARSIS &#x0026; SHARAD results. , 2007, , .		9
81	Periglacial geomorphology and landscape evolution of the Tempe Terra region, Mars. <i>Geological Society Special Publication</i> , 2011, 356, 43-67.	1.3	9
82	Marsâ€™ plasma system. Scientific potential of coordinated multipoint missions: â€œThe next generationâ€•. <i>Experimental Astronomy</i> , 2022, 54, 641-676.	3.7	9
83	Martian underground water detection: Thermal model and simulations of radar signal propagation. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	8
84	Correlations between VIMS and RADAR data over the surface of Titan: Implications for Titanâ€™s surface properties. <i>Icarus</i> , 2010, 208, 366-384.	2.5	8
85	Observations of Phobos by the Mars Express radar MARSIS: Description of the detection techniques and preliminary results. <i>Advances in Space Research</i> , 2017, 60, 2289-2302.	2.6	8
86	The banded terrain on northwestern Hellas Planitia: New observations and insights into its possible formation. <i>Icarus</i> , 2019, 321, 171-188.	2.5	8
87	Liquid Water Detection under the South Polar Layered Deposits of Marsâ€™ a Probabilistic Inversion Approach. <i>Remote Sensing</i> , 2019, 11, 2445.	4.0	7
88	The subsurface investigation by Mars Advanced Radar for Subsurface and Ionosphere Sounding (MARSIS). , 0, , .		6
89	Conditions for liquid or icy core existence in KBO objects: Numerical simulations for Orcus and Quaoar. <i>Planetary and Space Science</i> , 2014, 104, 147-155.	1.7	6
90	Resolution Enhancement and Interference Suppression for Planetary Radar Sounders. , 2018, , .		6

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91	Observations of Vertical Reflections from the Topside Martian Ionosphere. , 2007, , 373-388.		6
92	MARS-IRMA: in-situ infrared microscope analysis of Martian soil and rock samples.. Advances in Space Research, 2001, 28, 1219-1224.	2.6	5
93	MARSIS Data Inversion Approach. , 2007, , .		5
94	Saturn Satellites as Seen by Cassini Mission. Earth, Moon and Planets, 2009, 105, 289-310.	0.6	4
95	Ionosphere of Mars during the consecutive solar minima 23/24 and 24/25 as seen by MARSIS-Mars Express. Icarus, 2023, 393, 114616.	2.5	4
96	JIRAM, the Jovian Infrared Auroral Mapper. , 2014, , 271-324.		4
97	Numerical simulations of radar echoes rule out basal CO2 ice deposits at Ultimi Scopuli, Mars. Icarus, 2022, 386, 115163.	2.5	4
98	Varuna: Thermal evolution. Advances in Space Research, 2006, 38, 1946-1951.	2.6	3
99	SHARAD, a shallow radar sounder to investigate the red planet. , 2008, , .		3
100	Numerical computation of radar echoes measured by MARSIS during phobos flybys. , 2009, , .		3
101	A new method for determining the total electron content in Marsâ€™ ionosphere based on Mars Express MARSIS data. Planetary and Space Science, 2020, 182, 104812.	1.7	3
102	Exploration of Enceladus and Titan: investigating ocean worldsâ€™ evolution and habitability in the Saturn system. Experimental Astronomy, 2022, 54, 877-910.	3.7	3
103	Radar detection of subsurface features on Mars. Advances in Space Research, 2004, 33, 2263-2269.	2.6	2
104	The ISHTAR Mission: Probing the Internal Structure of NEOs. Highlights of Astronomy, 2005, 13, 738-742.	0.0	2
105	TITANâ€™S GROUND REFLECTANCE RETRIEVAL FROM CASSINI-VIMS DATA TAKEN DURING THE JULY 2ND, 2004 FLY-BY AT 2 AM UT. Earth, Moon and Planets, 2006, 96, 109-117.	0.6	2
106	Relationship of dayside main layer ionosphere height to local solar time on Mars and implications for solar wind interaction influence. Journal of Geophysical Research E: Planets, 2015, 120, 1427-1445.	3.6	2
107	Ducted electromagnetic waves in the Martian ionosphere detected by the Mars Advanced Radar for Subsurface and Ionosphere Sounding radar. Geophysical Research Letters, 2016, 43, 7381-7388.	4.0	2
108	A strategy for an accurate estimation of the basal permittivity in the Martian North Polar Layered Deposits. Geophysical Prospecting, 2017, 65, 891-900.	1.9	2

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109	Cassini radar : system concept and simulation results. Planetary and Space Science, 1998, 46, 1363-1374.	1.7	1
110	MARSIS Radar Data Interpretation to Characterize the Deeper Layers in the North Polar Cap on Mars. Advances in Astronautics Science and Technology, 2018, 1, 31-37.	0.8	1
111	Deep space orbit determination via Delta-DOR using VLBI antennas. CEAS Space Journal, 0, , 1.	2.3	1
112	Italian participation in the Mars exploration program. Advances in Space Research, 2001, 28, 1197-1202.	2.6	0
113	Subsurface Investigations by MARSIS in Mars Express Mission. , 2006, , .		0
114	Subsurface sounding in Northern hemisphere for Mars by MARSIS: Mars express mission. , 2008, , .		0
115	Exploring the Martian subsurface of Athabasca using MARSIS radar data: Testing the volcanic and fluvial hypotheses for the origin of the morphology. , 2009, , .		0
116	Radar subsurface sounding over the putative frozen sea in Cerberus Palus, Mars. , 2010, , .		0
117	Preliminary performance of Sub-Surface Radar for the EJSM/Laplace mission. , 2010, , .		0
118	A simple inversion model for the estimation of subsurface features of Mars poles. , 2010, , .		0
119	Probing the Hidden Geology of Isidis Planitia (Mars) with Impact Craters. Geosciences (Switzerland), 2015, 5, 30-44.	2.2	0
120	Volume Scattering Losses Evaluation for Radar Sounding of Jovian Icy Moons. , 2018, , .		0
121	Searching for Life on Mars: A Brief Summary. Springer Proceedings in Physics, 2021, , 115-122.	0.2	0
122	Radar Signal Propagation and Detection Through Ice. Space Sciences Series of ISSI, 2010, , 247-269.	0.0	0
123	Radar detection of subglacial water under the south polar cap of Mars: Where are we now?. , 2020, , .		0